STR-DE315/DE415

SERVICE MANUAL

AEP Model
UK Model



Photo : STR-DE415 model

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SPECIFICATIONS

Amplifier section

Power output

Stereo mode (DIN 1kHz, 4ohms)
STR-DE415 :
80W + 80W
STR-DE315 :
80W + 80W

Surround mode (DIN 1kHz, 4ohms)
Front :
STR-DE415 : 70W/ch
STR-DE315 : 60W/ch
Center :
STR-DE415 : 70W
STR-DE315 : 60W
(only in PROLOG MODE)
Rear :
STR-DE415 :
(DIN 1kHz, 4ohms)
70W
STR-DE315 :
(DIN 1kHz, 4ohms)
60W

Frequency response PHOTO : RIAA equalization curve
± 0.5dB
TV/LD, CD, TAPE/MD, VIDEO :
10Hz - 50kHz ± 1dB

Inputs

	Sensitivity	Impedance	S/N (Weighting network, input level)
PHONO (MM)	2.5mV	50 Kilohms	74dB 72dB*** (A,2.5mV)
CD,	200mV	50 Kilohms	82dB 82dB*** (A, 150mV)
TAPE/MD, TV/LD, VIDEO	150mV		

***78 IHF

Output TAPE/MD REC OUT :
Voltage : 150mV,
Impedance : 10 kilohms
VIDEO AUDIO OUT :
Voltage : 150mV,
Impedance : 10 kilohms
MIX AUDIO OUT (STR-DE415 only)
Voltage : 2V
Impedance : 10 kilohms
PHONES :Accepts low and high impedance headphones

Muting Full mute

BASS BOOST + 10dB at 70Hz

TONE ± 8dB at 100Hz and 10kHz

FM tuner section

Tuning range 87.5 - 108.0MHz (OTHER)
65.0 - 74.0MHz
(East European)

Aerial range 75ohms, unbalanced

Sensitivity Mono : 18.3 dBf, 2.2µV /75ohms
Stereo : 38.3 dBf, 22.5µV /75ohms

Usable sencitivity 11.2 dBf, 1µV /75ohms (IHF)

S/N Mono : 76dB
Stereo : 70dB

Harmonic diatortion at 1kHz Mono : 0.3%
Stereo : 0.5%

Separation 45dB at 1kHz

Frequency response 30Hz - 15kHz $^{+0.5}_{-2}$ dB

— Continued on next page —

FM STEREO/FM-AM RECEIVER

MICROFILM

SONY®

Selecitivity	60dB at 400kHz

AM tuner section

Tuning range	522 - 1611 kHz
Aerial	Loop aerial
Usable sensitivity	50dB/m (at 999kHz)
S/N	54dB (at 50mV/m)
Harmonic distortion	0.5% (50mV/m, 400Hz)
Selectivity	35dB

General

system	Tuner section : PLL quartz-locked digital synthesizer system Preamplifier section : Low-noise NF type equalizer Power amplifier section : Pure-complimentary SEPP
Power requirements	230VAC, 50/60Hz
Power consumption	STR-DE415 : 175W STR-DE315 : 175W
AC outputs	Switched 100W (except for the U.K. model)
Dimensions	430 × 145 × 295mm
Mass (Approx.)	6.4kg
Supplied accessories	FM wire aerial (1) AM loop aerial (1) Remote controller (remote) (1) Size AA (R6) batteries (2) Scart adaptor (1)

Design and specifications are subject to change without notice.

SAFETY-RELATED COMPONENT WARNING!!

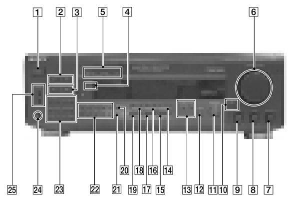
COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

TABLE OF CONTENTS

SECTION 1
GENERAL

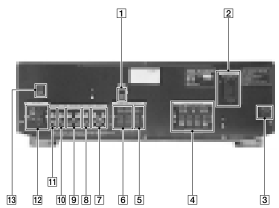
LOCATION AND FUNCTION OF CONTROLS

<FRONT>



1 POWER switch
2 CENTER LEVEL +, – buttons
3 REAR LEVEL +, – buttons
4 STANDBY indicator
5 FUNCTION indicators
6 MASTER VOLUME control
7 BALANCE control
8 TREBLE control
9 BASS control
10 BASS BOOST button/indicator
11 SURROUND ON/OFF button
12 MODE button
13 EFFECT/DELAY TIME, SET UP buttons
14 TAPE/MD button
15 PHONO button
16 TV/LD button
17 TUNER button
18 VIDEO button
19 CD button
20 DIRECT button
21 SHIFT button
22 Numeric buttons
23 Tuner control buttons
24 PHONES jack
25 SPEAKERS (A/B) buttons

<REAR>



1 WOOFER
2 AC OUTLET (EXCEPT UK)
3 AC power cord
4 FRONT SPEAKERS (A/B)
5 SURROUND SPEAKERS (CENTER)
6 SURROUND SPEAKERS (REAR)
7 VIDEO
8 TV/LD
9 TAPE/MD
10 CD
11 PHONO
12 ANTENNA (FM/AM)
13 SIGNAL GND

SECTION 2
EXPLANATION OF IC TERMINALS

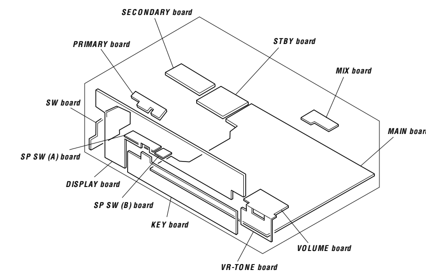
• IC201 μPD78044FGF-064-3B9

Pin No.	Pin Name	I/O	Description
1	DIG7	O	Fluorescent indicator tube drive.
2	DIG6	O	
3	DIG5	O	
4	DIG4	O	
5	DIG3	O	
6	DIG2	O	
7	DIG1	O	
8	+5V	—	Power supply (+5V).
9	S. CLK	I	System clock.
10	S. DATA	I	System data.
11	PLL. DATA	I	PLL data input from TU001.
12	S. CE (LC7288)	O	Chip enable output.
13	S. CE (LV100)	O	Chip enable output.
14	REAR-R	I	Input for model select.
15	BRIDGE	I	Protector detect input.
16	PROTECT	I	Protector detect input.
17	RESET	I	System reset terminal.
18	AUTO-STOP	I	Auto stop detect input.
19	STEREO-IN	I	Stereo detect input.
20	AVss	—	Ground.
21	SP-RY	O	Speaker relay drive.
22	SURR-RY	O	Surround Relay.
23	POWER-RY	O	Power relay drive.
24	AVss	—	Ground.
25	SIGNAL	I	A/D signal input terminal.
26	A/D3	I	A/D3 key input terminal.
27	A/D2	I	A/D2 key input terminal.
28	A/D1	I	A/D1 key input terminal.
29	AVDD	—	Power supply (+5V).
30	AV. REF	—	Reference voltage (+5V).
31	GND	—	Ground.
32	NC	—	Not used (Open).
33	Vss	—	Ground.
34	X1	I	System clock (4.19MHz).
35	X2	O	System clock (4.19MHz).
36	IC. MUTE	O	Mute drive output for μPD2581V (IC701).
37	PROLOGIC	O	Plologic LED.
38	SIMULATED	O	CINEMA STUDIO LED.
39	HALL	O	HALL LED.
40	T. MUTE	O	Tuner mute drive output.

Pin No.	Pin Name	I/O	Description
41	VOLUME UP	O	Volume up.
42	VOLUME DOWN	O	Volume down.
43	STANDBY	O	Standby LED drive.
44	SYS. POWER	I	System power ON/OFF.
45	RDS. DATA. IN	I	RDS data input.
46	RDS. CLK. IN	I	RDS clock input.
47	STOP	I	Stop signal input from NJM2103D (IC950).
48	Vss	—	Ground.
49	SIRCS	I	Sircs signal input.
50	POWER SW	I	Power switch input terminal.
51	5.1ch LED	—	5.1ch LED drive.
52	+5V	—	Power supply (+5V).
53	BASS BOOST	I	Bass boost LED drive.
54	FUNC. MUTE	O	Line mute drive.
55	SL MUTE	O	SL mute drive.
56	VERSION	I	Input for model select.
57	K14	I	Key in 4.
58	K13	I	Key in 3.
59	K12	I	Key in 2.
60	K11	I	Key in 1.
61	SR MUTE	O	SR mute drive.
62	S15	O	Key out 15.
63	S14	O	Key out 14.
64	S13	O	Key out 13.
65	S12	O	Key out 12.
66	S11	O	Key out 11. } Fluorescent indicator tube drive.
67	S10	O	Key out 10.
68	S9	O	Key out 9.
69	S8	O	Key out 8.
70	S7	O	Key out 7.
71	VLOAD	—	Connect to –24V.
72	S6	O	Key out 6.
73	S5	O	Key out 5.
74	S4	O	Key out 4. } Fluorescent indicator tube drive.
75	S3	O	Key out 3.
76	S2	O	Key out 2.
77	S1	O	Key out 1.
78	DIG10	O	Fluorescent indicator tube drive.
79	DIG9	O	
80	DIG8	O	

SECTION 3
DIAGRAMS

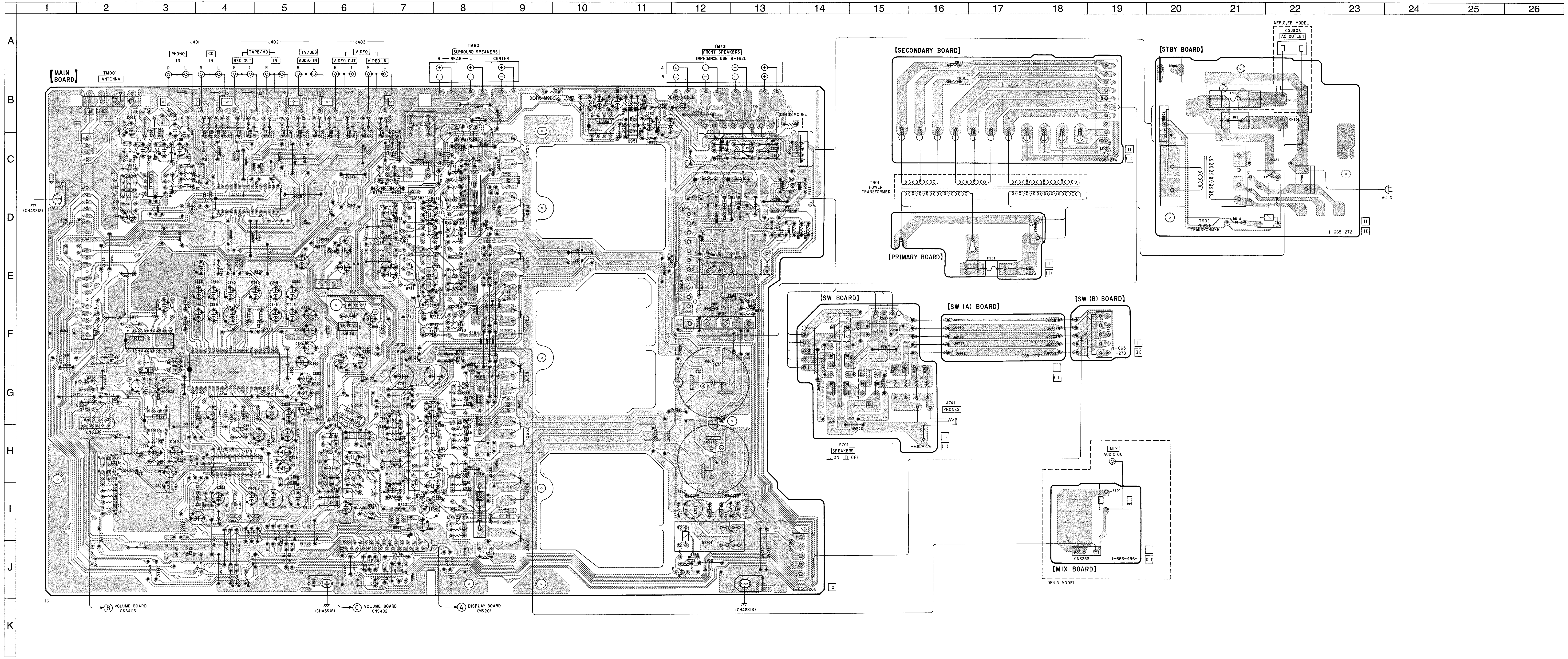
3-1. CIRCUIT BOARDS LOCATION



3-2. PRINTED WIRING BOARDS — MAIN SECTION —

• **Semiconductor Location**

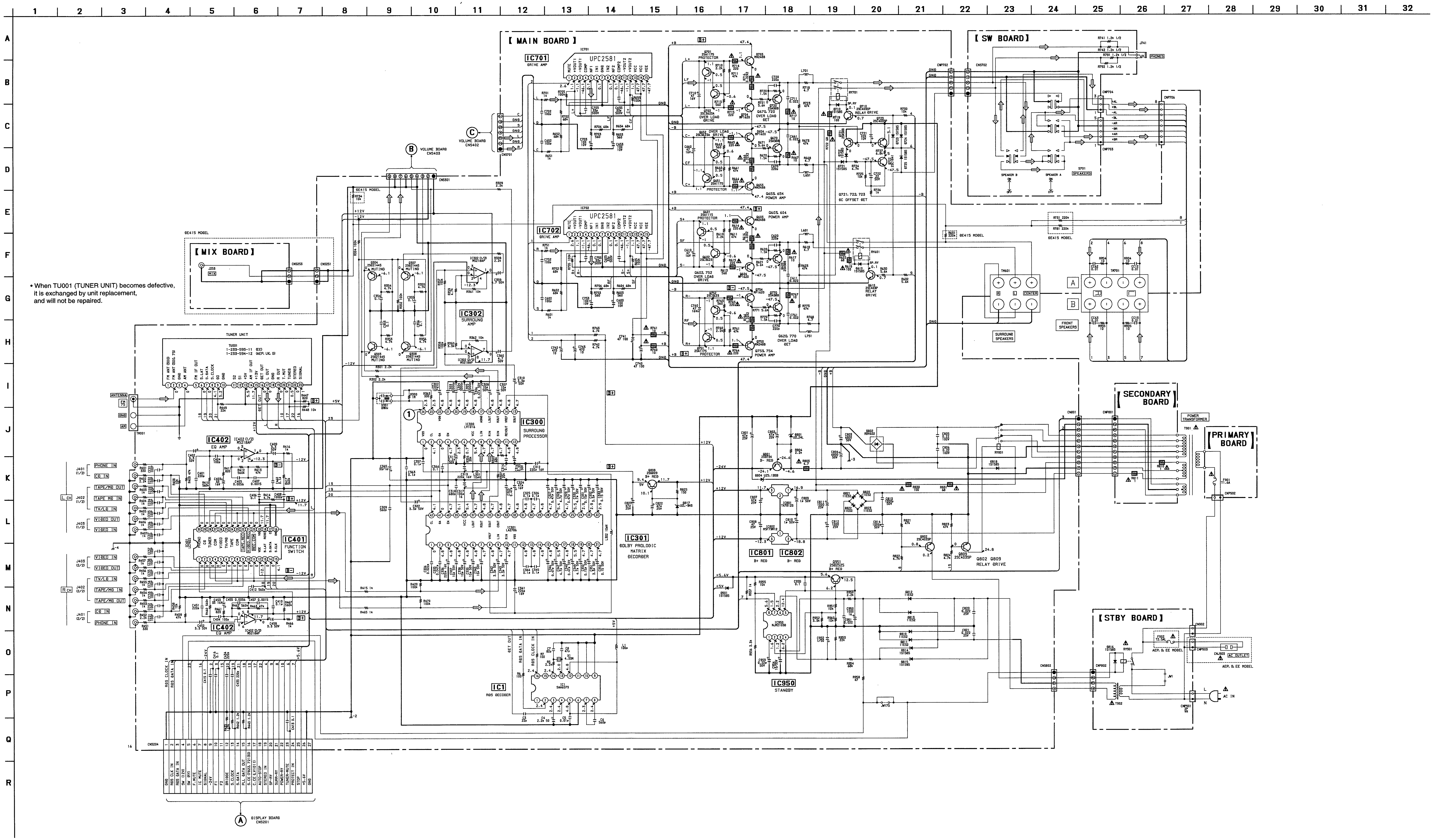
Ref. No.	Location	Ref. No.	Location
D610	C-7	Q303	H-2
D710	J-12	Q304	G-2
D721	H-6	Q307	G-2
D722	H-6	Q308	H-2
D723	I-6	Q601	D-8
D724	I-6	Q602	C-9
D725	I-6	Q603	D-9
D801	I-6	Q604	C-9
D802	F-12	Q610	C-7
D804	J-7	Q620	D-8
D810	C-13	Q651	H-8
D811	C-13	Q652	G-9
D812	C-13	Q653	H-9
D813	C-13	Q654	G-9
D814	C-12	Q670	G-8
D815	C-12	Q701	I-8
D816	D-21	Q702	I-9
D817	F-6	Q703	J-9
D818	D-13	Q704	I-9
D820	D-13	Q710	J-12
D821	D-13	Q720	H-8
D822	D-12	Q721	H-6
D823	D-12	Q722	I-6
D901	J-2	Q723	I-6
		Q751	F-8
IC1	F-3	Q752	E-9
IC300	H-4	Q753	F-9
IC301	G-4	Q754	E-9
IC302	G-3	Q770	E-8
IC401	D-4	Q801	I-7
IC402	D-3	Q802	D-14
IC701	H-7	Q808	F-6
IC702	E-7	Q809	F-13
IC801	E-6	Q951	B-11
IC802	E-6		
IC950	B-10		



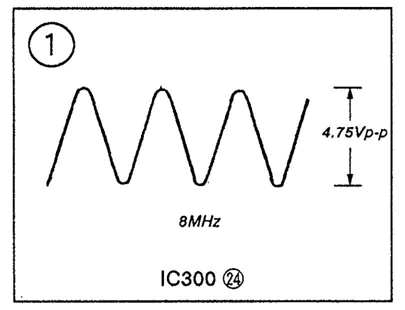
Note:
- —o—— : Parts extracted from the component side.
- ▭▭▭ : Pattern on the side which is seen.
- Abbreviation
  EE : East European
  G : German

3-3. SCHEMATIC DIAGRAM — MAIN SECTION —

• Refer to page 15 for IC Block Diagrams.



• Waveform



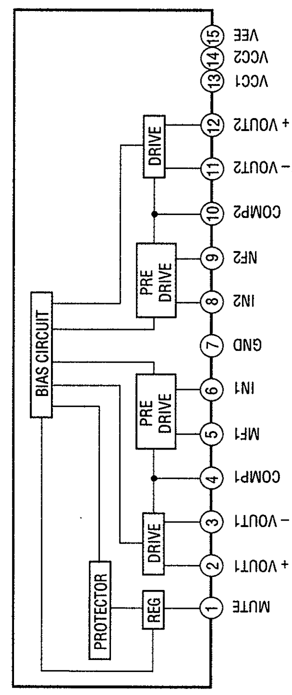
Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : Internal component.
- [B+] : B+ Line.
- [B–] : B– Line.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  No mark: FM
  (　　) : AM
- Voltages are taken with a VOM (Input impedance 10MΩ).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM
- Abbreviation
  G : German
  EE : East European

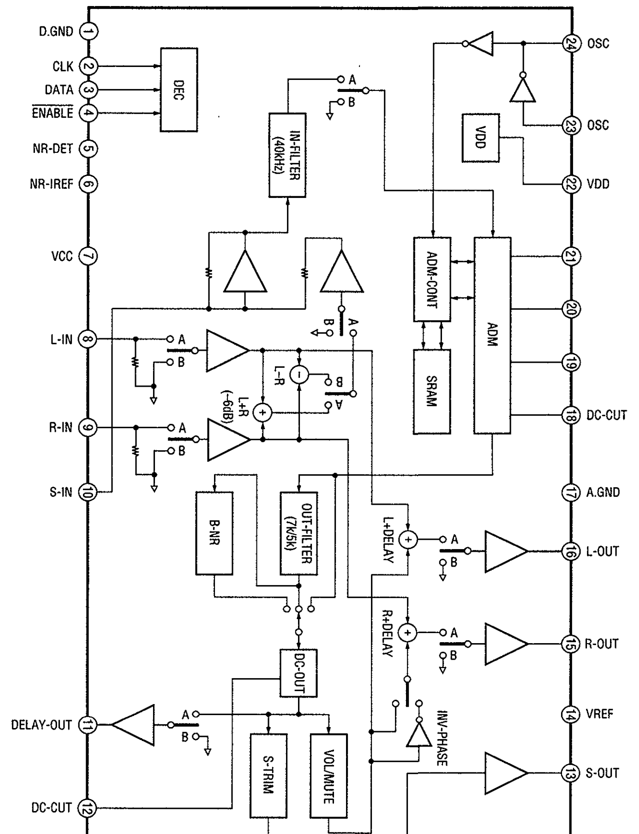
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

• IC BLOCK DIAGRAMS — MAIN SECTION —

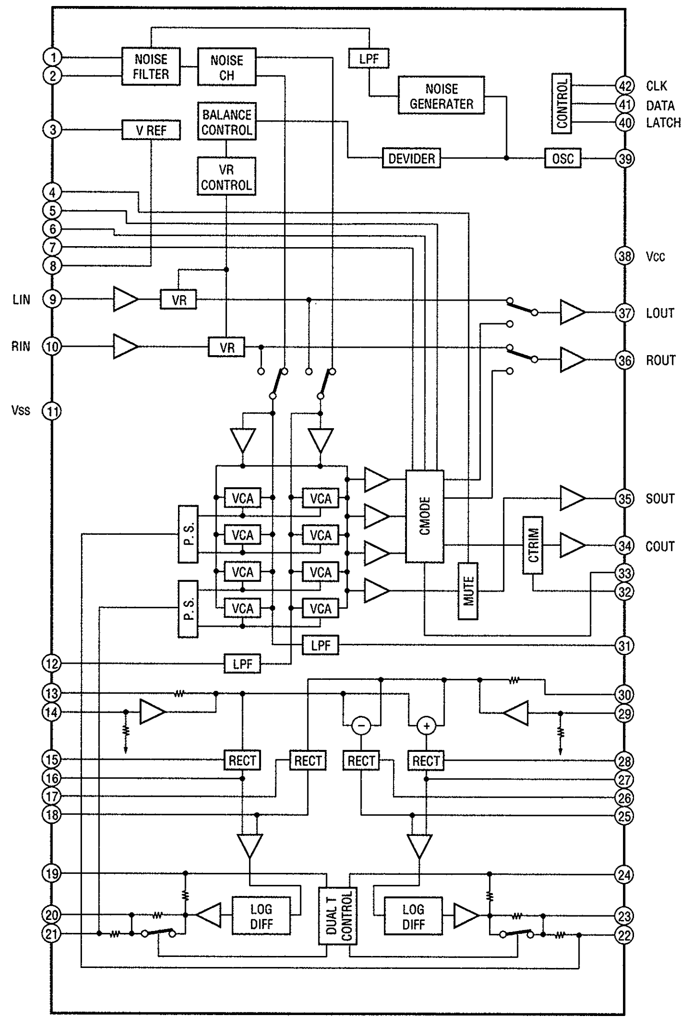
IC701, IC702 uPC2581V



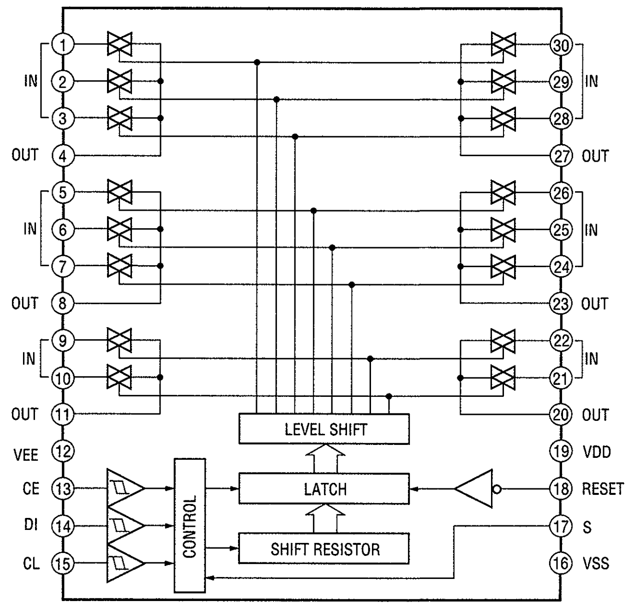
IC300 LV1016



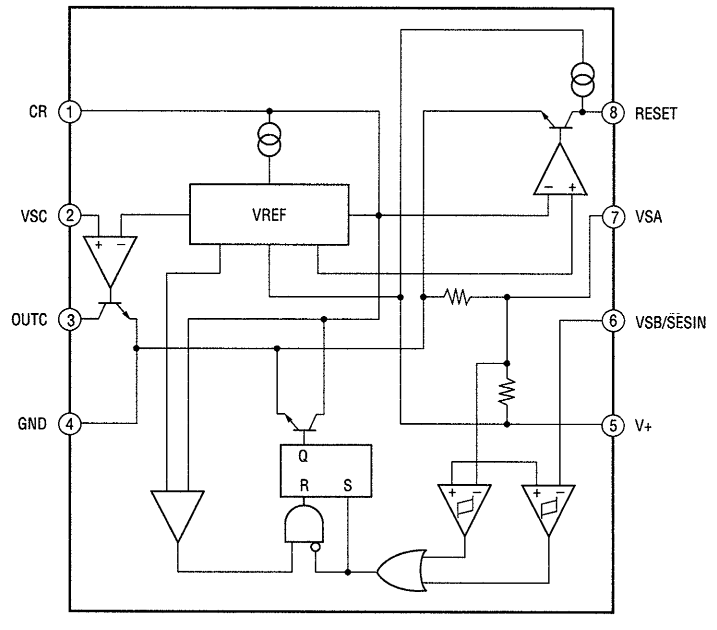
IC301 LA2786



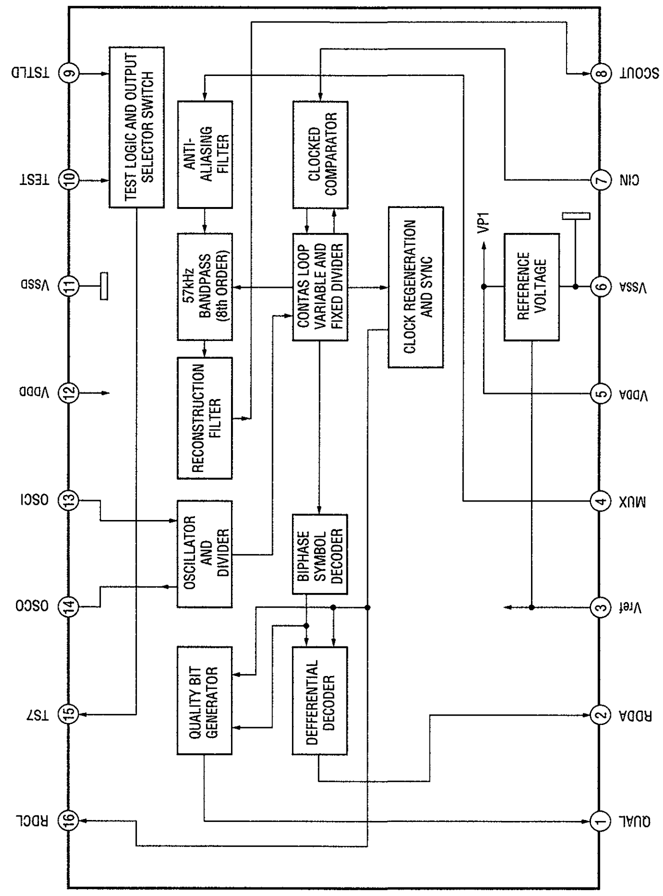
IC401 LC7822



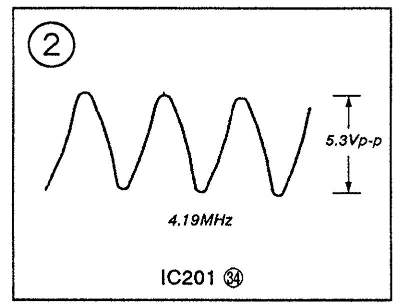
IC950 NJM2103D



IC1 BU1922

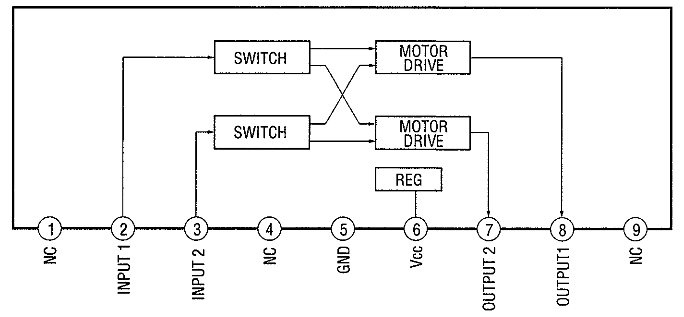


• Waveform



• IC BLOCK DIAGRAM — DISPLAY SECTION —

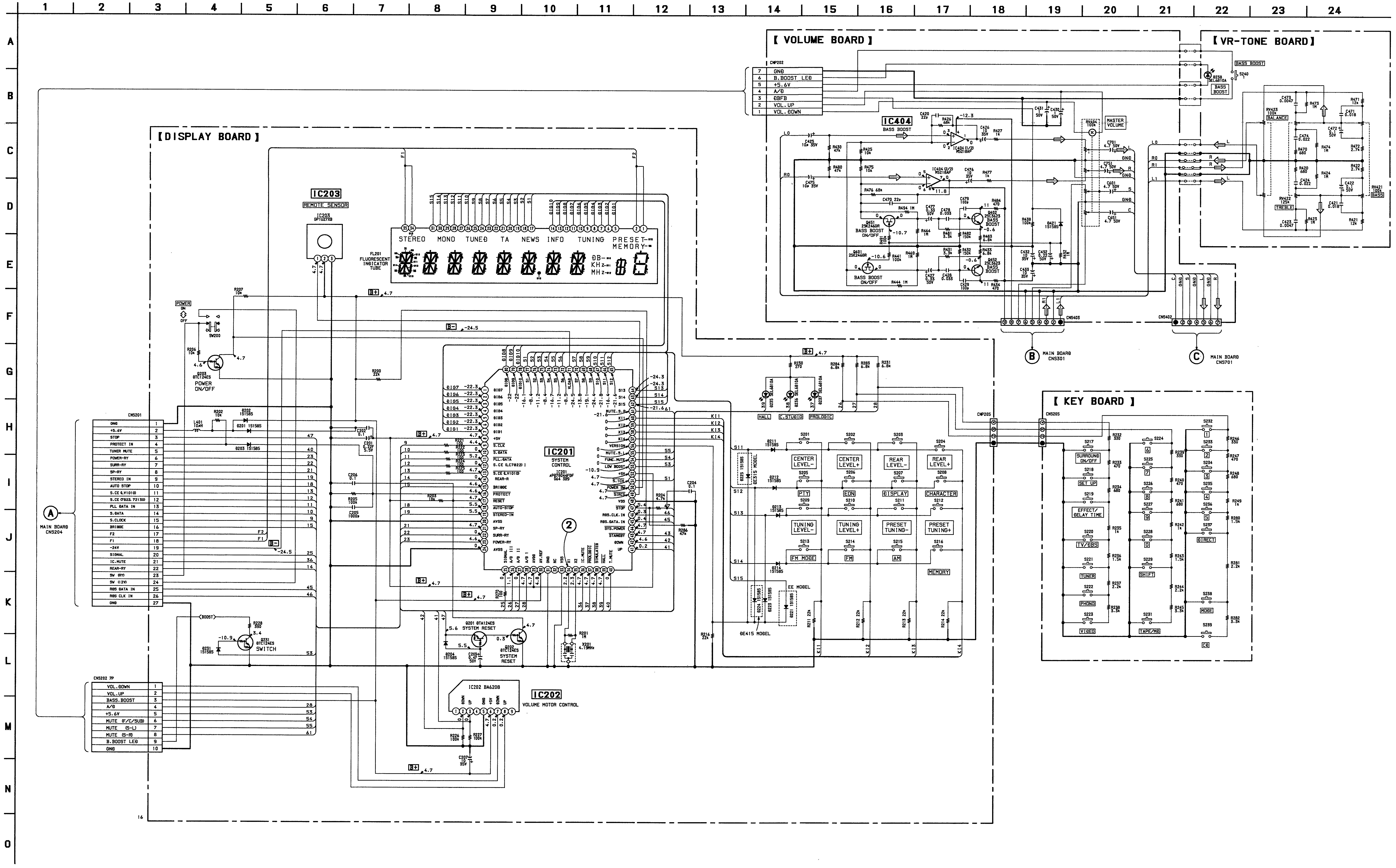
IC202 BA6208



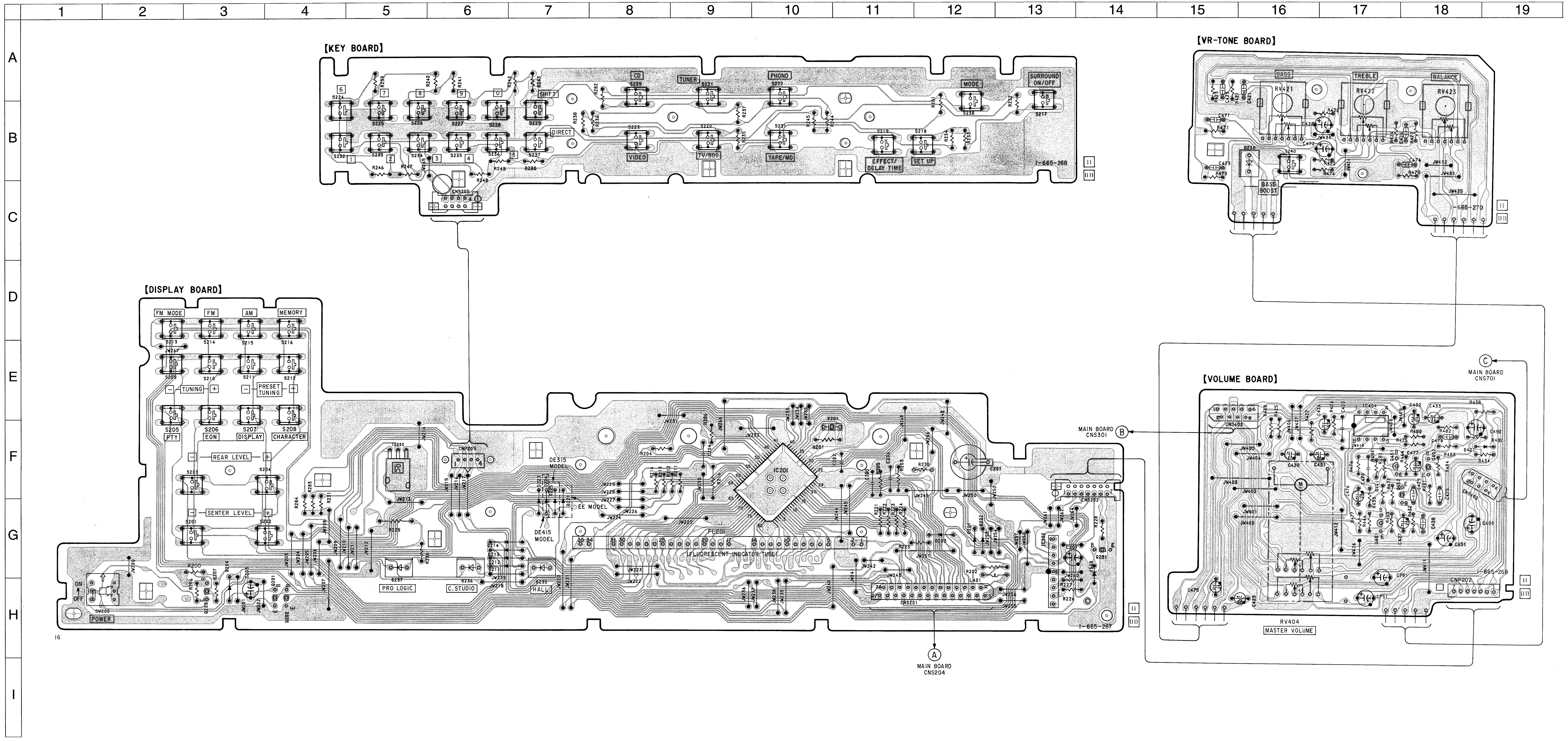
Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : Internal component.
- B+ : B+ Line.
- B– : B– Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  No mark: FM
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path. ⇨ : FM
- Abbreviation
  EE : East European

3-4. SCHEMATIC DIAGRAM — DISPLAY SECTION —



3-5. PRINTED WIRING BOARDS — DISPLAY SECTION —



• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D201	G-12	D238	B-16
D202	G-12	D421	F-18
D203	G-12		
D204	H-3	IC201	F-10
D211	G-7	IC202	G-13
D212	G-7	IC203	F-5
D213	G-7	IC404	E-17
D214	G-7		
D221	F-7	Q201	H-4
D223	F-7	Q202	H-4
D224	F-7	Q203	H-3
D225	F-7	Q231	G-14
D231	G-14	Q401	G-17
D235	G-7	Q402	F-18
D236	G-6	Q451	F-17
D237	G-5	Q452	F-17

Note:
- ○—— : Parts extracted from the component side.
- ▭ : Pattern on the side which is seen.
- Abbreviation
  EE : East European

SECTION 4
EXPLODED VIEWS

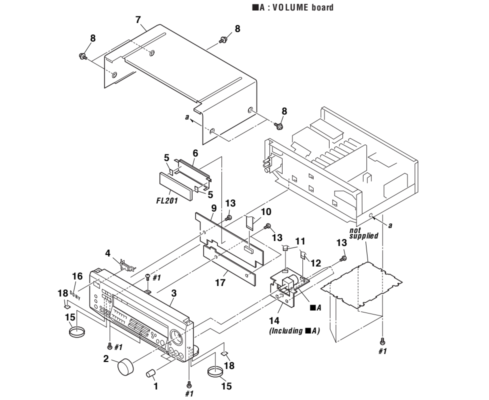
Note:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (#mark) list is given in the last of this parts list.
- Abbreviation
  G : German
  EE : East European

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

4-1. FRONT PANEL SECTION

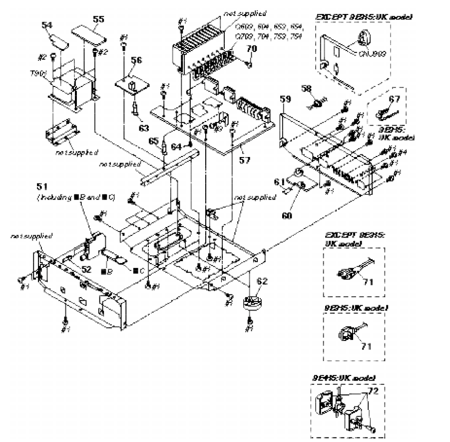
■A : VOLUME board



Ref. No.	Part No.	Description	Remarks
1	4-980-639-01	KNOB (R14)	
2	X-4946-873-1	KNOB (R48) ASSY	
3	4-989-844-31	PANEL, FRONT (DE415)	
3	4-989-844-51	PANEL, FRONT (DE315)	
4	4-980-109-01	BUTTON (P-M)	
* 5	4-921-941-01	CUSHION (FL)	
* 6	4-943-107-11	HOLDER (FL TUBE)	
* 7	4-980-658-01	CASE (413226)	
8	3-704-366-01	SCREW (CASE) (M3X8)	
* 9	A-4392-962-A	DISPLAY BOARD, COMPLETE(DE415:AEP,UK,G)	
* 9	A-4392-971-A	DISPLAY BOARD, COMPLETE(DE315:AEP,UK,G)	
* 9	A-4398-073-A	DISPLAY BOARD, COMPLETE (DE415:EE)	
* 9	A-4398-075-A	DISPLAY BOARD, COMPLETE (DE315:EE)	
10	1-773-252-11	WIRE (FLAT TYPE) (27 CORE)	
11	1-769-908-11	WIRE (FLAT TYPE) (9 CORE)	
12	1-765-314-11	WIRE (FLAT TYPE) (7 CORE)	
13	4-951-620-01	SCREW (2.6X8), +BVTP	
* 14	A-4392-964-A	VR-TONE BOARD, COMPLETE	
15	4-977-593-11	RING (DIA. 50), ORNAMENTAL	
16	3-008-600-11	EMBLEM (5-AR), SONY	
* 17	A-4392-966-A	KEY BOARD, COMPLETE	
18	4-977-358-11	CUSHION (8X12.5)	
FL201	1-517-141-11	INDICATOR TUBE, FLUORESCENT	

4-2. CHASSIS SECTION

■B : SW (A) board
■C : SW (B) board



Ref. No.	Part No.	Description	Remarks
* 51	A-4392-965-A	SW BOARD, COMPLETE	
52	4-951-801-01	BUTTON (S)	
* 54	1-665-273-11	PRIMARY BOARD	
* 55	1-665-274-11	SECONDARY BOARD	
* 56	1-665-272-11	STANDBY BOARD	
* 57	A-4392-970-A	MAIN BOARD, COMPLETE (DE415:AEP,UK,G)	
* 57	A-4392-972-A	MAIN BOARD, COMPLETE (DE315:AEP,UK,G)	
* 57	A-4398-074-A	MAIN BOARD, COMPLETE (DE415:EE)	
* 57	A-4398-076-A	MAIN BOARD, COMPLETE (DE315:EE)	
* 58	3-703-244-21	BUSHING (2104), CORD	
* 59	4-989-901-51	PANEL, BACK (DE315:UK)	
* 59	4-989-901-61	PANEL, BACK (DE315:AEP,G,EE)	
* 59	4-989-902-31	PANEL, BACK (DE415)	
60	1-666-496-11	MIX BOARD (DE415)	
61	1-773-252-11	WIRE (FLAT TYPE) (27 CORE)	
62	X-4947-207-1	FOOT ASSY (F50150S)	
63	4-924-098-01	HOLDER, PC BOARD	
64	4-812-134-00	RIVET (DIA.3.5), NYLON	
* 65	4-924-098-21	HOLDER, PC BOARD	
67	4-956-370-12	BAND, PLUG FIXED (DE315:UK)	
70	3-905-609-01	SCREW (TRANSISTOR)	
⚠71	1-751-520-11	CORD, POWER (DE315:UK)	
⚠71	1-769-744-11	CORD, POWER (EXCEPT DE315:UK)	
⚠72	1-770-019-11	ADAPTER CONVERSION PLUG 3P (DE415:UK)	
⚠CNJ903	1-526-794-11	OUTLET, AC (EXCEPT DE315:UK)	
⚠T901	1-431-260-11	TRANSFORMER, POWER (DE315)	
⚠T901	1-431-266-11	TRANSFORMER, POWER (DE415)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

SECTION 5
ELECTRICAL PARTS LIST

DISPLAY

Note:

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- Abbreviations
  G : German
  EE : East European
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: μF
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: μH
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA... , uPA... , μPA... ,
  uPB... , μPB... , uPC... , μPC... ,
  uPD..., μPD...

Ref. No.	Part No.	Description	Remarks
*	A-4392-962-A	DISPLAY BOARD, COMPLETE (DE415:AEP,UK,G) ************************	
*	A-4392-971-A	DISPLAY BOARD, COMPLETE (DE315:AEP,UK,G) ************************	
*	A-4398-073-A	DISPLAY BOARD, COMPLETE (DE415:EE) ************************	
*	A-4398-075-A	DISPLAY BOARD, COMPLETE (DE315:EE) ************************	
*	4-921-941-01	CUSHION (FL)	
*	4-943-107-11	HOLDER (FL TUBE)	
		< CAPACITOR >	
C201	1-104-905-11	CAPACITOR 0.22F 5.5V	
C202	1-164-159-21	CERAMIC 0.1uF 50V	
C203	1-124-465-00	ELECT 0.47uF 20% 50V	
C204	1-164-159-21	CERAMIC 0.1uF 50V	
C205	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C206	1-164-159-21	CERAMIC 0.1uF 50V	
C207	1-126-096-11	ELECT 10uF 20% 35V	
		< CONNECTOR >	
CNS201	1-569-327-11	SOCKET, CONNECTOR 27P	
CNS202	1-770-400-11	HOUSING, CONNECTOR (PC BOARD) 7P	
		< DIODE >	
D201	8-719-815-85	DIODE 1S1585	
D202	8-719-815-85	DIODE 1S1585	
D203	8-719-815-85	DIODE 1S1585	
D204	8-719-815-85	DIODE 1S1585	
D211	8-719-815-85	DIODE 1S1585	
D212	8-719-815-85	DIODE 1S1585	
D213	8-719-815-85	DIODE 1S1585	
D214	8-719-815-85	DIODE 1S1585	
D221	8-719-815-85	DIODE 1S1585 (DE315:EE/DE415:EE)	
D223	8-719-815-85	DIODE 1S1585	
D224	8-719-815-85	DIODE 1S1585 (DE415)	
D225	8-719-815-85	DIODE 1S1585 (DE315)	
D231	8-719-815-85	DIODE 1S1585	
D235	8-719-313-50	DIODE SEL6810A-TH12 (HALL)	
D236	8-719-313-50	DIODE SEL6810A-TH12 (C.STUDIO)	
D237	8-719-313-50	DIODE SEL6810A-TH12 (PRO LOGIC)	
		< FILTER >	
FL201	1-517-141-11	INDICATOR TUBE, FLUORESCENT	
		< IC >	
IC201	8-759-479-19	IC uPD78044FGF-064-3B9	
IC202	8-759-962-08	IC BA6208	
IC203	8-759-332-18	IC GP1U27XB (REMOTE SENSOR)	
		< COIL >	
L401	1-410-509-11	INDUCTOR 10uH	
		< TRANSISTOR >	
Q201	8-729-900-63	TRANSISTOR DTA124ES	
Q202	8-729-900-36	TRANSISTOR DTC124ES	
Q203	8-729-900-36	TRANSISTOR DTC124ES	
Q231	8-729-900-36	TRANSISTOR DTC124ES	
		< RESISTOR >	
R200	1-247-863-91	CARBON 22K 5% 1/4W	
R201	1-247-903-00	CARBON 1M 5% 1/4W	
R202	1-249-429-11	CARBON 10K 5% 1/4W	
R203	1-249-429-11	CARBON 10K 5% 1/4W	
R204	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R205	1-249-441-11	CARBON 100K 5% 1/4W	
R206	1-249-429-11	CARBON 10K 5% 1/4W	
R207	1-249-429-11	CARBON 10K 5% 1/4W	
R211	1-247-863-91	CARBON 22K 5% 1/4W	
R212	1-247-863-91	CARBON 22K 5% 1/4W	
R213	1-247-863-91	CARBON 22K 5% 1/4W	
R214	1-247-863-91	CARBON 22K 5% 1/4W	
R216	1-247-863-91	CARBON 22K 5% 1/4W	
R221	1-247-807-31	CARBON 100 5% 1/4W	
R222	1-247-807-31	CARBON 100 5% 1/4W	
R223	1-247-807-31	CARBON 100 5% 1/4W	
R224	1-247-807-31	CARBON 100 5% 1/4W	
R225	1-247-807-31	CARBON 100 5% 1/4W	
R226	1-249-441-11	CARBON 100K 5% 1/4W	
R227	1-249-441-11	CARBON 100K 5% 1/4W	
R228	1-249-412-11	CARBON 390 5% 1/4W	F
R229	1-249-410-11	CARBON 270 5% 1/4W	F
R230	1-249-410-11	CARBON 270 5% 1/4W	F
R231	1-249-427-11	CARBON 6.8K 5% 1/4W	F
R270	1-247-807-31	CARBON 100 5% 1/4W	
R283	1-249-427-11	CARBON 6.8K 5% 1/4W	F
R284	1-249-427-11	CARBON 6.8K 5% 1/4W	F
R286	1-249-437-11	CARBON 47K 5% 1/4W	
		< SWITCH >	
S201	1-554-937-11	SWITCH, KEY BOARD (CENTER LEVEL–)	
S202	1-554-937-11	SWITCH, KEY BOARD (CENTER LEVEL+)	
S203	1-554-937-11	SWITCH, KEY BOARD (REAR LEVEL–)	
S204	1-554-937-11	SWITCH, KEY BOARD (REAR LEVEL+)	
S205	1-554-937-11	SWITCH, KEY BOARD (CHARACTER)	
S206	1-554-937-11	SWITCH, KEY BOARD (DISPLAY)	
S207	1-554-937-11	SWITCH, KEY BOARD (EON)	
S208	1-554-937-11	SWITCH, KEY BOARD (PTY)	
S209	1-554-937-11	SWITCH, KEY BOARD (TUNING–)	
S210	1-554-937-11	SWITCH, KEY BOARD (TUNING+)	

DISPLAY KEY MAIN

Ref. No.	Part No.	Description	Remarks
S211	1-554-937-11	SWITCH, KEY BOARD (PRESET TUNING–)	
S212	1-554-937-11	SWITCH, KEY BOARD (PRESET TUNING+)	
S213	1-554-937-11	SWITCH, KEY BOARD (FM MODE)	
S214	1-554-937-11	SWITCH, KEY BOARD (FM)	
S215	1-554-937-11	SWITCH, KEY BOARD (AM)	
S216	1-554-937-11	SWITCH, KEY BOARD (MEMORY)	
		< SWITCH >	
SW200	1-771-054-11	SWITCH, PUSH (1 KEY) (POWER)	
		< VIBRATOR >	
X201	1-577-101-11	VIBRATOR, CERAMIC 4.19MHz	
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*	A-4392-966-A	KEY BOARD, COMPLETE ********************	
		< CONNECTOR >	
CNP205	1-779-366-11	CONNECTOR, BOARD TO BOARD 4P	
		< RESISTOR >	
R232	1-249-411-11	CARBON 330 5% 1/4W	
R233	1-249-413-11	CARBON 470 5% 1/4W	F
R234	1-249-415-11	CARBON 680 5% 1/4W	F
R235	1-249-417-11	CARBON 1K 5% 1/4W	F
R236	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R237	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R238	1-247-843-11	CARBON 3.3K 5% 1/4W	
R239	1-249-411-11	CARBON 330 5% 1/4W	
R240	1-249-413-11	CARBON 470 5% 1/4W	F
R241	1-249-415-11	CARBON 680 5% 1/4W	F
R242	1-249-417-11	CARBON 1K 5% 1/4W	F
R243	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R244	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R245	1-247-843-11	CARBON 3.3K 5% 1/4W	
R246	1-249-411-11	CARBON 330 5% 1/4W	
R247	1-249-413-11	CARBON 470 5% 1/4W	F
R248	1-249-415-11	CARBON 680 5% 1/4W	F
R249	1-249-417-11	CARBON 1K 5% 1/4W	F
R280	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R281	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R282	1-247-843-11	CARBON 3.3K 5% 1/4W	
		< SWITCH >	
S217	1-554-937-11	SWITCH, KEY BOARD (SURROUND ON/OFF)	
S218	1-554-937-11	SWITCH, KEY BOARD (SET UP)	
S219	1-554-937-11	SWITCH, KEY BOARD (EFFECT/DELAY TIME)	
S220	1-554-937-11	SWITCH, KEY BOARD (TV/DBS)	
S221	1-554-937-11	SWITCH, KEY BOARD (TUNER)	
S222	1-554-937-11	SWITCH, KEY BOARD (PHONO)	
S223	1-554-937-11	SWITCH, KEY BOARD (VIDEO)	
S224	1-554-937-11	SWITCH, KEY BOARD (6)	
S225	1-554-937-11	SWITCH, KEY BOARD (7)	
S226	1-554-937-11	SWITCH, KEY BOARD (8)	
S227	1-554-937-11	SWITCH, KEY BOARD (9)	
S228	1-554-937-11	SWITCH, KEY BOARD (0)	
S229	1-554-937-11	SWITCH, KEY BOARD (SHIFT)	
S231	1-554-937-11	SWITCH, KEY BOARD (TAPE/MD)	
S232	1-554-937-11	SWITCH, KEY BOARD (1)	
S233	1-554-937-11	SWITCH, KEY BOARD (2)	
S234	1-554-937-11	SWITCH, KEY BOARD (3)	
S235	1-554-937-11	SWITCH, KEY BOARD (4)	
S236	1-554-937-11	SWITCH, KEY BOARD (5)	
S237	1-554-937-11	SWITCH, KEY BOARD (DIRECT)	
S238	1-554-937-11	SWITCH, KEY BOARD (MODE)	
S239	1-554-937-11	SWITCH, KEY BOARD (CD)	
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*	A-4392-970-A	MAIN BOARD, COMPLETE (DE415:AEP,UK,G) **********************	
*	A-4392-972-A	MAIN BOARD, COMPLETE (DE315:AEP,UK,G) **********************	
*	A-4398-074-A	MAIN BOARD, COMPLETE (DE415:EE) **********************	
*	A-4398-076-A	MAIN BOARD, COMPLETE (DE315:EE) **********************	
	3-905-609-01	SCREW (TRANSISTOR)	
	4-812-134-00	RIVET (DIA. 3.5), NYLON	
	7-685-872-09	SCREW +BVTT 3X8 (S)	
		< CAPACITOR >	
C3	1-162-286-21	CERAMIC 220PF 10% 50V	
C4	1-126-961-11	ELECT 2.2uF 20% 50V	
C5	1-162-306-11	CERAMIC 0.01uF 20% 16V	
C6	1-162-291-31	CERAMIC 560PF 10% 50V	
C7	1-102-527-11	CERAMIC 82PF 5% 50V	
C8	1-102-852-91	CERAMIC 47PF 5% 50V	
C302	1-126-934-11	ELECT 220uF 20% 16V	
C303	1-130-494-11	MYLAR 0.082uF 5% 50V	
C304	1-137-367-11	FILM 0.0033uF 5% 50V	
C305	1-130-494-11	MYLAR 0.082uF 5% 50V	
C306	1-126-959-11	ELECT 0.47uF 20% 50V	
C307	1-126-964-11	ELECT 10uF 20% 50V	
C308	1-126-964-11	ELECT 10uF 20% 50V	
C309	1-162-291-31	CERAMIC 560PF 10% 50V	
C310	1-126-962-11	ELECT 3.3uF 20% 50V	
C311	1-126-961-11	ELECT 2.2uF 20% 50V	
C312	1-126-934-11	ELECT 220uF 20% 16V	
C313	1-126-934-11	ELECT 220uF 20% 16V	
C314	1-136-165-00	FILM 0.1uF 5% 50V	
C316	1-124-252-00	ELECT 0.33uF 20% 50V	
C317	1-126-933-11	ELECT 100uF 20% 16V	
C318	1-137-363-91	FILM 680PF 5% 50V	
C322	1-126-962-11	ELECT 3.3uF 20% 50V	
C323	1-136-173-00	FILM 0.47uF 5% 50V	
C324	1-126-967-11	ELECT 47uF 20% 16V	
C325	1-136-165-00	FILM 0.1uF 5% 50V	
C326	1-136-165-00	FILM 0.1uF 5% 50V	
C327	1-126-959-11	ELECT 0.47uF 20% 50V	
C328	1-126-963-11	ELECT 4.7uF 20% 50V	
C329	1-126-959-11	ELECT 0.47uF 20% 50V	
C335	1-136-161-00	FILM 0.047uF 5% 50V	
C336	1-126-934-11	ELECT 220uF 20% 16V	
C337	1-126-964-11	ELECT 10uF 20% 50V	
C338	1-126-964-11	ELECT 10uF 20% 50V	
C339	1-126-964-11	ELECT 10uF 20% 50V	
C340	1-126-964-11	ELECT 10uF 20% 50V	
C341	1-126-934-11	ELECT 220uF 20% 16V	
C342	1-126-962-11	ELECT 3.3uF 20% 50V	
C343	1-126-962-11	ELECT 3.3uF 20% 50V	
C344	1-136-165-00	FILM 0.1uF 5% 50V	

Ref. No.	Part No.	Description			Remarks
C345	1-136-165-00	FILM	0.1uF	5%	50V
C346	1-126-959-11	ELECT	0.47uF	20%	50V
C347	1-126-963-11	ELECT	4.7uF	20%	50V
C348	1-126-959-11	ELECT	0.47uF	20%	50V
C349	1-126-963-11	ELECT	4.7uF	20%	50V
C350	1-124-250-11	ELECT	0.15uF	20%	50V
C351	1-126-962-11	ELECT	3.3uF	20%	50V
C352	1-124-250-11	ELECT	0.15uF	20%	50V
C353	1-164-159-21	CERAMIC	0.1uF		50V
C354	1-164-159-21	CERAMIC	0.1uF		50V
C355	1-164-159-21	CERAMIC	0.1uF		50V
C356	1-164-159-21	CERAMIC	0.1uF		50V
C357	1-164-159-21	CERAMIC	0.1uF		50V
C359	1-126-963-11	ELECT	4.7uF	20%	50V
C360	1-126-963-11	ELECT	4.7uF	20%	50V
C363	1-164-159-21	CERAMIC	0.1uF		50V
C365	1-126-966-11	ELECT	33uF	20%	16V
C366	1-164-159-21	CERAMIC	0.1uF		50V
C401	1-162-286-21	CERAMIC	220PF	10%	50V
C402	1-126-962-11	ELECT	3.3uF	20%	50V
C403	1-126-966-11	ELECT	33uF	20%	16V
C404	1-162-282-31	CERAMIC	100PF	10%	50V
C405	1-137-459-11	FILM	0.0056uF	5%	100V
C406	1-164-159-21	CERAMIC	0.1uF		50V
C407	1-137-365-11	FILM	0.0015uF	5%	50V
C408	1-162-294-31	CERAMIC	0.001uF	10%	50V
C409	1-126-962-11	ELECT	3.3uF	20%	50V
C410	1-164-159-21	CERAMIC	0.1uF		50V
C412	1-162-291-31	CERAMIC	560PF	10%	50V
C413	1-164-159-21	CERAMIC	0.1uF		50V
C415	1-164-159-21	CERAMIC	0.1uF		50V
C416	1-164-159-21	CERAMIC	0.1uF		50V
C434	1-162-286-21	CERAMIC	220PF	10%	50V
C435	1-162-286-21	CERAMIC	220PF	10%	50V
C451	1-162-286-21	CERAMIC	220PF	10%	50V
C452	1-126-962-11	ELECT	3.3uF	20%	50V
C453	1-126-966-11	ELECT	33uF	20%	16V
C454	1-162-282-31	CERAMIC	100PF	10%	50V
C455	1-137-459-11	FILM	0.0056uF	5%	100V
C457	1-137-365-11	FILM	0.0015uF	5%	50V
C459	1-126-962-11	ELECT	3.3uF	20%	50V
C460	1-164-159-21	CERAMIC	0.1uF		50V
C602	1-162-282-31	CERAMIC	100PF	10%	50V
C603	1-126-933-11	ELECT	100uF	20%	10V
C605	1-102-233-00	CERAMIC	33PF	10%	500V
C610	1-126-967-11	ELECT	47uF	20%	16V
C611	1-137-372-11	FILM	0.022uF	5%	50V
C620	1-162-286-21	CERAMIC	220PF	10%	50V
C652	1-162-282-31	CERAMIC	100PF	10%	50V
C653	1-126-933-11	ELECT	100uF	20%	10V
C655	1-102-233-00	CERAMIC	33PF	10%	500V
C660	1-126-967-11	ELECT	47uF	20%	16V
C661	1-137-372-11	FILM	0.022uF	5%	50V
C670	1-162-286-21	CERAMIC	220PF	10%	50V
C702	1-162-282-31	CERAMIC	100PF	10%	50V
C703	1-126-933-11	ELECT	100uF	20%	10V
C705	1-102-233-00	CERAMIC	33PF	10%	500V
C710	1-126-967-11	ELECT	47uF	20%	16V
C711	1-137-372-11	FILM	0.022uF	5%	50V
C720	1-162-286-21	CERAMIC	220PF	10%	50V

Ref. No.	Part No.	Description			Remarks
C721	1-126-923-11	ELECT	220uF	20%	10V
C722	1-126-964-11	ELECT	10uF	20%	50V
C740	1-128-562-11	ELECT	47uF	20%	100V
C741	1-128-562-11	ELECT	47uF	20%	100V
C742	1-126-925-11	ELECT	470uF	20%	10V
C743	1-126-925-11	ELECT	470uF	20%	10V
C752	1-162-282-31	CERAMIC	100PF	10%	50V
C753	1-126-933-11	ELECT	100uF	20%	10V
C755	1-102-233-00	CERAMIC	33PF	10%	500V
C760	1-126-967-11	ELECT	47uF	20%	16V
C761	1-137-372-11	FILM	0.022uF	5%	50V
C770	1-162-286-21	CERAMIC	220PF	10%	50V
C799	1-164-159-21	CERAMIC	0.1uF		50V
C801	1-104-664-11	ELECT	47uF	20%	25V
C802	1-104-664-11	ELECT	47uF	20%	25V
C803	1-128-506-11	ELECT	6800uF	20%	50V
C804	1-128-506-11	ELECT	6800uF	20%	50V
C805	1-130-781-00	FILM	0.22uF	10%	100V
C806	1-130-781-00	FILM	0.22uF	10%	100V
C807	1-104-664-11	ELECT	47uF	20%	25V
C808	1-104-664-11	ELECT	47uF	20%	25V
C809	1-126-960-11	ELECT	1uF	20%	50V
C810	1-126-960-11	ELECT	1uF	20%	50V
C811	1-126-942-61	ELECT	1000uF	20%	25V
C812	1-126-942-61	ELECT	1000uF	20%	25V
C813	1-101-001-00	CERAMIC	0.001uF		50V
C814	1-101-001-00	CERAMIC	0.001uF		50V
C820	1-161-494-00	CERAMIC	0.022uF		25V
C821	1-161-494-00	CERAMIC	0.022uF		25V
C822	1-104-664-11	ELECT	47uF	20%	25V
C823	1-104-664-11	ELECT	47uF	20%	25V
C950	1-126-767-11	ELECT	1000uF	20%	16V
C951	1-164-097-11	CERAMIC	0.022uF		50V
C952	1-126-960-11	ELECT	1uF	20%	50V
C953	1-124-464-11	ELECT	0.22uF	20%	50V
C954	1-126-096-11	ELECT	10uF	20%	35V
C955	1-164-159-21	CERAMIC	0.1uF		50V
CC01	1-162-282-31	CERAMIC	100PF	10%	50V
CC02	1-162-282-31	CERAMIC	100PF	10%	50V
CC03	1-162-282-31	CERAMIC	100PF	10%	50V
CC04	1-162-282-31	CERAMIC	100PF	10%	50V
CC05	1-162-282-31	CERAMIC	100PF	10%	50V
CC06	1-162-282-31	CERAMIC	100PF	10%	50V
CC07	1-162-282-31	CERAMIC	100PF	10%	50V
CC51	1-162-282-31	CERAMIC	100PF	10%	50V
CC52	1-162-282-31	CERAMIC	100PF	10%	50V
CC53	1-162-282-31	CERAMIC	100PF	10%	50V
CC54	1-162-282-31	CERAMIC	100PF	10%	50V
CC55	1-162-282-31	CERAMIC	100PF	10%	50V
CC56	1-162-282-31	CERAMIC	100PF	10%	50V
CC57	1-162-282-31	CERAMIC	100PF	10%	50V
		< CONNECTOR >			
CNP702	1-750-388-11	PIN, CONNECTOR 5P			
CNP706	1-764-477-11	PIN, CONNECTOR (PC BOARD) 8P			
CNS204	1-569-327-11	SOCKET, CONNECTOR 27P			
CNS301	1-568-442-11	SOCKET, CONNECTOR 9P			
CNS701	1-568-439-11	SOCKET, CONNECTOR 7P			
CNS802	1-770-480-11	SOCKET, CONNECTOR PIN 4P			

MAIN

Ref. No.	Part No.	Description	Remarks
		< DIODE >	
D610	8-719-815-85	DIODE 1S1585	
D710	8-719-815-85	DIODE 1S1585	
D721	8-719-815-85	DIODE 1S1585	
D722	8-719-815-85	DIODE 1S1585	
D723	8-719-815-85	DIODE 1S1585	
D724	8-719-815-85	DIODE 1S1585	
D725	8-719-815-85	DIODE 1S1585	
D801	8-719-002-33	DIODE UZL-24L	
D802	8-719-302-38	DIODE RBV-602-01	
D804	8-719-010-38	DIODE UZ-5.1BSB	
D810	8-719-200-82	DIODE 11ES2	
D811	8-719-200-82	DIODE 11ES2	
D812	8-719-200-82	DIODE 11ES2	
D813	8-719-200-82	DIODE 11ES2	
D814	8-719-815-85	DIODE 1S1585	
D815	8-719-815-85	DIODE 1S1585	
D817	8-719-001-31	DIODE UZL-9H3-TA	
D818	8-719-815-85	DIODE 1S1585	
D820	8-719-200-82	DIODE 11ES2	
D821	8-719-200-82	DIODE 11ES2	
D822	8-719-200-82	DIODE 11ES2	
D823	8-719-200-82	DIODE 11ES2	
D901	8-719-815-85	DIODE 1S1585	
		< TERMINAL >	
* G200	1-537-738-21	TERMINAL, EARTH	
* G201	1-537-738-21	TERMINAL, EARTH	
* G202	1-537-738-21	TERMINAL, EARTH	
		< IC >	
IC1	8-759-450-86	IC BU1922	
IC300	8-759-442-97	IC LV1016	
IC301	8-759-442-96	IC LA2786	
IC302	8-759-636-74	IC M5218AP-22	
IC401	8-759-805-14	IC LC7822	
IC402	8-759-636-74	IC M5218AP-22	
IC701	8-759-326-52	IC uPC2581V	
IC702	8-759-326-52	IC uPC2581V	
IC801	8-759-231-58	IC TA7812S	
IC802	8-759-604-45	IC M5F79M12	
IC950	8-759-333-83	IC NJM2103D	
		< JACK >	
J401	1-770-614-11	JACK, PIN 4P (PHONO/CD)	
J402	1-770-015-11	JACK, PIN 6P (TAPE/MD,TV DBS AUDIO IN)	
J403	1-770-614-11	JACK, PIN 4P (VIDEO)	
		< COIL >	
L1	1-410-521-11	INDUCTOR 100uH	
L301	1-410-509-11	INDUCTOR 10uH	
L302	1-410-509-11	INDUCTOR 10uH	
L601	1-420-872-00	COIL, AIR-CORE	
L651	1-420-872-00	COIL, AIR-CORE	
L701	1-420-872-00	COIL, AIR-CORE	
L751	1-420-872-00	COIL, AIR-CORE	

Ref. No.	Part No.	Description	Remarks
		< TRANSISTOR >	
Q303	8-729-922-37	TRANSISTOR 2SD2144S	
Q304	8-729-922-37	TRANSISTOR 2SD2144S	
Q307	8-729-922-37	TRANSISTOR 2SD2144S	
Q308	8-729-922-37	TRANSISTOR 2SD2144S	
Q601	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q602	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q603	8-749-010-25	IC MN2488-OPY-M	
Q604	8-749-010-26	IC MP1620-OPY-M	
Q610	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q620	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
Q651	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q652	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q653	8-749-010-25	IC MN2488-OPY-M	
Q654	8-749-010-26	IC MP1620-OPY-M	
Q670	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
Q701	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q702	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q703	8-749-010-25	IC MN2488-OPY-M	
Q704	8-749-010-26	IC MP1620-OPY-M	
Q710	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q720	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
Q721	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
Q722	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
Q723	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q751	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q752	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q753	8-749-010-25	IC MN2488-OPY-M	
Q754	8-749-010-26	IC MP1620-OPY-M	
Q770	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
Q801	8-729-140-97	TRANSISTOR 2SB734-34	
Q802	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q808	8-729-180-92	TRANSISTOR 2SD809-K	
Q809	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q951	8-729-030-18	TRANSISTOR 2SD2525	

Ref. No.	Part No.	Description			Remarks
		< RESISTOR >			
R5	1-249-421-11	CARBON	2.2K	5%	1/4W F
R6	1-247-807-31	CARBON	100	5%	1/4W
R7	1-247-807-31	CARBON	100	5%	1/4W
R300	1-247-903-00	CARBON	1M	5%	1/4W
R301	1-249-421-11	CARBON	2.2K	5%	1/4W F
R302	1-249-421-11	CARBON	2.2K	5%	1/4W F
R303	1-249-439-11	CARBON	68K	5%	1/4W
R304	1-249-441-11	CARBON	100K	5%	1/4W
R306	1-249-436-11	CARBON	39K	5%	1/4W
R307	1-247-862-11	CARBON	20K	5%	1/4W
R308	1-249-421-11	CARBON	2.2K	5%	1/4W F
R309	1-249-421-11	CARBON	2.2K	5%	1/4W F
R352	1-249-441-11	CARBON	100K	5%	1/4W
R353	1-249-425-11	CARBON	4.7K	5%	1/4W F
R354	1-249-425-11	CARBON	4.7K	5%	1/4W F
R355	1-249-425-11	CARBON	4.7K	5%	1/4W F
R356	1-249-425-11	CARBON	4.7K	5%	1/4W F
R357	1-249-441-11	CARBON	100K	5%	1/4W
R358	1-249-441-11	CARBON	100K	5%	1/4W
R359	1-249-425-11	CARBON	4.7K	5%	1/4W F

Ref. No.	Part No.	Description			Remarks
R360	1-247-843-11	CARBON	3.3K	5%	1/4W
R361	1-249-429-11	CARBON	10K	5%	1/4W
R362	1-249-429-11	CARBON	10K	5%	1/4W
R363	1-249-411-11	CARBON	330	5%	1/4W
R401	1-249-411-11	CARBON	330	5%	1/4W
R402	1-249-421-11	CARBON	2.2K	5%	1/4W F
R403	1-249-417-11	CARBON	1K	5%	1/4W F
R404	1-249-417-11	CARBON	1K	5%	1/4W F
R405	1-249-417-11	CARBON	1K	5%	1/4W F
R406	1-249-417-11	CARBON	1K	5%	1/4W F
R407	1-249-417-11	CARBON	1K	5%	1/4W F
R408	1-249-429-11	CARBON	10K	5%	1/4W
R409	1-249-437-11	CARBON	47K	5%	1/4W
R410	1-247-897-11	CARBON	560K	5%	1/4W
R411	1-249-416-11	CARBON	820	5%	1/4W F
R412	1-247-897-11	CARBON	560K	5%	1/4W
R413	1-249-437-11	CARBON	47K	5%	1/4W
R414	1-249-425-11	CARBON	4.7K	5%	1/4W F
R415	1-249-417-11	CARBON	1K	5%	1/4W F
R416	1-249-417-11	CARBON	1K	5%	1/4W F
R417	1-247-897-11	CARBON	560K	5%	1/4W
R420	1-249-441-11	CARBON	100K	5%	1/4W
R435	1-249-418-11	CARBON	1.2K	5%	1/4W F
R442	1-249-418-11	CARBON	1.2K	5%	1/4W F
R443	1-249-418-11	CARBON	1.2K	5%	1/4W F
R447	1-249-416-11	CARBON	820	5%	1/4W F
R448	1-249-429-11	CARBON	10K	5%	1/4W
R449	1-247-863-91	CARBON	22K	5%	1/4W
R451	1-249-411-11	CARBON	330	5%	1/4W
R452	1-249-421-11	CARBON	2.2K	5%	1/4W F
R453	1-249-417-11	CARBON	1K	5%	1/4W F
R454	1-249-417-11	CARBON	1K	5%	1/4W F
R455	1-249-417-11	CARBON	1K	5%	1/4W F
R456	1-249-417-11	CARBON	1K	5%	1/4W F
R457	1-249-417-11	CARBON	1K	5%	1/4W F
R458	1-249-429-11	CARBON	10K	5%	1/4W
R459	1-249-437-11	CARBON	47K	5%	1/4W
R460	1-247-897-11	CARBON	560K	5%	1/4W
R461	1-249-416-11	CARBON	820	5%	1/4W F
R462	1-247-897-11	CARBON	560K	5%	1/4W
R463	1-249-437-11	CARBON	47K	5%	1/4W
R465	1-249-417-11	CARBON	1K	5%	1/4W F
R466	1-249-417-11	CARBON	1K	5%	1/4W F
R467	1-247-897-11	CARBON	560K	5%	1/4W
R470	1-249-441-11	CARBON	100K	5%	1/4W
R473	1-249-437-11	CARBON	47K	5%	1/4W
R601	1-249-417-11	CARBON	1K	5%	1/4W F
R602	1-249-439-11	CARBON	68K	5%	1/4W
R603	1-249-414-11	CARBON	560	5%	1/4W F
R604	1-249-439-11	CARBON	68K	5%	1/4W
R605	1-249-441-11	CARBON	100K	5%	1/4W
R610	1-249-421-11	CARBON	2.2K	5%	1/4W F
R611	1-249-437-11	CARBON	47K	5%	1/4W
R613	1-249-414-11	CARBON	560	5%	1/4W F
⚠R614	1-249-409-11	CARBON	220	5%	1/4W F
⚠R615	1-249-409-11	CARBON	220	5%	1/4W F
⚠R616	1-233-352-41	ENCAPSULATED COMPONENT			
⚠R617	1-249-393-11	CARBON	10	5%	1/4W F
R618	1-249-389-11	CARBON	4.7	5%	1/4W F
⚠R619	1-249-405-11	CARBON	100	5%	1/4W F
R620	1-249-419-11	CARBON	1.5K	5%	1/4W F
R621	1-249-426-11	CARBON	5.6K	5%	1/4W
⚠R622	1-249-403-11	CARBON	68	5%	1/4W F
R623	1-249-437-11	CARBON	47K	5%	1/4W
R630	1-249-426-11	CARBON	5.6K	5%	1/4W
R631	1-247-887-00	CARBON	220K	5%	1/4W (DE415)
R632	1-249-426-11	CARBON	5.6K	5%	1/4W
R651	1-249-417-11	CARBON	1K	5%	1/4W F
R652	1-249-439-11	CARBON	68K	5%	1/4W
R653	1-249-414-11	CARBON	560	5%	1/4W F
R654	1-249-439-11	CARBON	68K	5%	1/4W
R655	1-249-441-11	CARBON	100K	5%	1/4W
R660	1-249-421-11	CARBON	2.2K	5%	1/4W F
R661	1-249-437-11	CARBON	47K	5%	1/4W
R663	1-249-414-11	CARBON	560	5%	1/4W F
⚠R664	1-249-409-11	CARBON	220	5%	1/4W F
⚠R665	1-249-409-11	CARBON	220	5%	1/4W F
⚠R666	1-233-352-41	ENCAPSULATED COMPONENT			
⚠R667	1-249-393-11	CARBON	10	5%	1/4W F
R668	1-249-389-11	CARBON	4.7	5%	1/4W F
R670	1-249-419-11	CARBON	1.5K	5%	1/4W F
R671	1-249-426-11	CARBON	5.6K	5%	1/4W
R672	1-249-431-11	CARBON	15K	5%	1/4W
R673	1-249-437-11	CARBON	47K	5%	1/4W
R701	1-249-417-11	CARBON	1K	5%	1/4W F
R702	1-249-439-11	CARBON	68K	5%	1/4W
R703	1-249-414-11	CARBON	560	5%	1/4W F
R704	1-249-439-11	CARBON	68K	5%	1/4W
R705	1-249-441-11	CARBON	100K	5%	1/4W
R710	1-249-421-11	CARBON	2.2K	5%	1/4W F
R711	1-249-437-11	CARBON	47K	5%	1/4W
R713	1-249-414-11	CARBON	560	5%	1/4W F
⚠R714	1-249-409-11	CARBON	220	5%	1/4W F
⚠R715	1-249-409-11	CARBON	220	5%	1/4W F
⚠R716	1-233-352-41	ENCAPSULATED COMPONENT			
⚠R717	1-249-393-11	CARBON	10	5%	1/4W F
R718	1-249-389-11	CARBON	4.7	5%	1/4W F
⚠R719	1-249-405-11	CARBON	100	5%	1/4W F
R720	1-249-419-11	CARBON	1.5K	5%	1/4W F
R721	1-249-426-11	CARBON	5.6K	5%	1/4W
⚠R722	1-249-403-11	CARBON	68	5%	1/4W F
R723	1-249-437-11	CARBON	47K	5%	1/4W
R724	1-249-425-11	CARBON	4.7K	5%	1/4W F
R725	1-249-429-11	CARBON	10K	5%	1/4W
R726	1-249-417-11	CARBON	1K	5%	1/4W F
R727	1-249-427-11	CARBON	6.8K	5%	1/4W F
R730	1-249-429-11	CARBON	10K	5%	1/4W
R731	1-247-887-00	CARBON	220K	5%	1/4W (DE415)
R734	1-249-429-11	CARBON	10K	5%	1/4W (DE415)
⚠R740	1-249-393-11	CARBON	10	5%	1/4W F
⚠R741	1-249-393-11	CARBON	10	5%	1/4W F
R742	1-249-425-11	CARBON	4.7K	5%	1/4W F
R743	1-249-425-11	CARBON	4.7K	5%	1/4W F
R751	1-249-417-11	CARBON	1K	5%	1/4W F
R752	1-249-439-11	CARBON	68K	5%	1/4W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

MAIN MIX PRIMARY SECONDARY STBY

Ref. No.	Part No.	Description			Remarks
R753	1-249-414-11	CARBON	560	5%	1/4W F
R754	1-249-439-11	CARBON	68K	5%	1/4W
R755	1-249-441-11	CARBON	100K	5%	1/4W
R760	1-249-421-11	CARBON	2.2K	5%	1/4W F
R761	1-249-437-11	CARBON	47K	5%	1/4W
R763	1-249-414-11	CARBON	560	5%	1/4W F
⚠R764	1-249-409-11	CARBON	220	5%	1/4W F
⚠R765	1-249-409-11	CARBON	220	5%	1/4W F
⚠R766	1-233-352-41	ENCAPSULATED COMPONENT			
⚠R767	1-249-393-11	CARBON	10	5%	1/4W F
R768	1-249-389-11	CARBON	4.7	5%	1/4W F
R770	1-249-419-11	CARBON	1.5K	5%	1/4W F
R771	1-249-426-11	CARBON	5.6K	5%	1/4W
R772	1-249-431-11	CARBON	15K	5%	1/4W
R773	1-249-437-11	CARBON	47K	5%	1/4W
R781	1-247-887-00	CARBON	220K	5%	1/4W (DE415)
⚠R803	1-249-389-11	CARBON	4.7	5%	1/4W F
R804	1-249-421-11	CARBON	2.2K	5%	1/4W F
R821	1-249-437-11	CARBON	47K	5%	1/4W
R822	1-249-425-11	CARBON	4.7K	5%	1/4W F
R823	1-249-437-11	CARBON	47K	5%	1/4W
R824	1-249-425-11	CARBON	4.7K	5%	1/4W F
R825	1-249-407-11	CARBON	150	5%	1/4W F
⚠R830	1-249-405-11	CARBON	100	5%	1/4W F
⚠R831	1-249-403-11	CARBON	68	5%	1/4W F
R950	1-249-421-11	CARBON	2.2K	5%	1/4W F
R951	1-249-429-11	CARBON	10K	5%	1/4W
R952	1-247-843-11	CARBON	3.3K	5%	1/4W
R953	1-247-863-91	CARBON	22K	5%	1/4W
R954	1-249-439-11	CARBON	68K	5%	1/4W
R955	1-249-429-11	CARBON	10K	5%	1/4W
R956	1-247-843-11	CARBON	3.3K	5%	1/4W
R957	1-249-417-11	CARBON	1K	5%	1/4W F
R958	1-249-401-11	CARBON	47	5%	1/4W F
R960	1-249-429-11	CARBON	10K	5%	1/4W
		< RELAY >			
RY601	1-515-921-11	RELAY (12V)			
RY701	1-515-921-11	RELAY (12V)			
RY801	1-755-013-11	RELAY			
		< TERMINAL >			
TM1	1-694-266-11	TERMINAL BOARD, ANT (ANTENNA)			
TM601	1-537-510-11	TERMINAL BOARD (SPEAKER) (6P) (SURROUND SPEAKER)			
TM701	1-537-376-11	TERMINAL BOARD (SPEAKER) (FRONT SPEAKER)			
		< TUNER >			
TU001	1-233-594-12	ENCAPSULATED COMPONENT (AEP,UK,G)			
TU001	1-233-595-11	ENCAPSULATED COMPONENT (EE)			
		< VIBRATOR >			
X1	1-579-900-21	VIBRATOR, CRYSTAL 4.33MHz			
X301	1-579-952-21	VIBRATOR, CERAMIC 8MHz			

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Ref. No.	Part No.	Description			Remarks
*	1-666-496-11	MIX BOARD (DE415) **********			
		< CONNECTOR >			
CNS253	1-691-765-11	PLUG (MICRO CONNECTOR) 3P (DE415)			
		< JACK >			
J253	1-774-843-11	JACK, PIN 1P (MIX)(DE415)			

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Ref. No.	Part No.	Description			Remarks
*	1-665-273-11	PRIMARY BOARD **************			
	1-533-233-21	HOLDER, FUSE			
		< FUSE >			
⚠F901	1-532-259-00	FUSE TIME LAG 1.6A			

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Ref. No.	Part No.	Description			Remarks
*	1-665-274-11	SECONDARY BOARD *****************			
		< CONNECTOR >			
CNP801	1-764-480-11	PIN, CONNECTOR (PC BOARD) 11P			
		< RESISTOR >			
⚠R810	1-249-381-11	CARBON	1	5%	1/4W F
⚠R811	1-249-381-11	CARBON	1	5%	1/4W F

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Ref. No.	Part No.	Description			Remarks
*	1-665-272-11	STBY BOARD ***********			
	1-533-233-11	HOLDER, FUSE			
		< CONNECTOR >			
CNP802	1-779-495-11	PLUG, CONNECTOR PIN 4P			
CNP901	1-564-321-00	PIN, CONNECTOR 2P			
CNP903	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P (AEP,G,EE)			
		< DIODE >			
D816	8-719-815-85	DIODE 1S1585			
		< FUSE >			
⚠F902	1-532-286-00	FUSE TIME LAG 2.5A (AEP,G,EE)			
		< RELAY >			
⚠RY901	1-515-720-11	RELAY			
		< TRANSFORMER >			
⚠T902	1-450-358-11	TRANSFORMER, POWER			

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The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remarks
*	A-4392-965-A	SW BOARD, COMPLETE ******************* SW (A) BOARD ************ SW (B) BOARD ************	
		< CONNECTOR >	
CNP703	1-764-474-11	PIN, CONNECTOR (PC BOARD) 5P	
CNP704	1-764-473-11	PIN, CONNECTOR (PC BOARD) 3P	
CNS205	1-770-397-11	HOUSING, CONNECTOR(PC BOARD)4P	
CNS702	1-770-378-11	CONNECTOR, BOARD TO BOARD 5P	
		< JACK >	
J741	1-750-733-11	JACK (LARGE TYPE) (PHONES)	
		< RESISTOR >	
R741	1-260-100-11	CARBON 1.2K 5%	1/2W
R742	1-260-100-11	CARBON 1.2K 5%	1/2W
R791	1-260-100-11	CARBON 1.2K 5%	1/2W
R792	1-260-100-11	CARBON 1.2K 5%	1/2W
		< SWITCH >	
S701	1-762-319-11	SWITCH, PUSH (2 KEY) (SPEAKERS)	

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Ref. No.	Part No.	Description	Remarks
*	A-4392-964-A	VR-TONE BOARD, COMPLETE ************************ VOLUME BOARD **************	
		< CAPACITOR >	
C420	1-162-207-31	CERAMIC 22PF 5%	50V
C421	1-137-440-11	FILM 0.018uF 5%	50V
C422	1-124-463-00	ELECT 0.1uF 20%	50V
C423	1-137-368-11	FILM 0.0047uF 5%	50V
C424	1-137-372-11	FILM 0.022uF 5%	50V
C425	1-126-096-11	ELECT 10uF 20%	35V
C426	1-126-096-11	ELECT 10uF 20%	35V
C427	1-124-252-00	ELECT 0.33uF 20%	50V
C428	1-130-489-00	MYLAR 0.033uF 5%	50V
C429	1-102-973-00	CERAMIC 100PF 5%	50V
C430	1-126-301-11	ELECT 1uF 20%	50V
C431	1-126-301-11	ELECT 1uF 20%	50V
C432	1-126-096-11	ELECT 10uF 20%	35V
C433	1-126-096-11	ELECT 10uF 20%	35V
C470	1-162-207-31	CERAMIC 22PF 5%	50V
C471	1-137-440-11	FILM 0.018uF 5%	50V
C472	1-124-463-00	ELECT 0.1uF 20%	50V
C473	1-137-368-11	FILM 0.0047uF 5%	50V
C474	1-137-372-11	FILM 0.022uF 5%	50V
C475	1-126-096-11	ELECT 10uF 20%	35V
C476	1-126-096-11	ELECT 10uF 20%	35V
C477	1-124-252-00	ELECT 0.33uF 20%	50V
C478	1-130-489-00	MYLAR 0.033uF 5%	50V
C479	1-102-973-00	CERAMIC 100PF 5%	50V
C492	1-124-464-11	ELECT 0.22uF 20%	50V
C601	1-126-163-11	ELECT 4.7uF 20%	50V
C651	1-126-163-11	ELECT 4.7uF 20%	50V
C701	1-126-163-11	ELECT 4.7uF 20%	50V
C751	1-126-163-11	ELECT 4.7uF 20%	50V
		< CONNECTOR >	
CNP202	1-770-391-11	PIN, CONNECTOR (PC BOARD) 7P	
CNS402	1-568-439-11	SOCKET, CONNECTOR 7P	
CNS403	1-568-442-11	SOCKET, CONNECTOR 9P	
		< DIODE >	
D238	8-719-313-50	DIODE SEL6810A-TH12 (BASS BOOST)	
D421	8-719-815-85	DIODE 1S1585	
		< IC >	
IC404	8-759-636-74	IC M5218AP-22	
		< TRANSISTOR >	
Q401	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q402	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q451	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q452	8-729-141-30	TRANSISTOR 2SC3623A-LK	
		< RESISTOR >	
R420	1-249-415-11	CARBON 680 5%	1/4W F
R421	1-249-430-11	CARBON 12K 5%	1/4W
R422	1-249-422-11	CARBON 2.7K 5%	1/4W F
R423	1-247-903-00	CARBON 1M 5%	1/4W
R424	1-247-903-00	CARBON 1M 5%	1/4W
R425	1-249-429-11	CARBON 10K 5%	1/4W
R426	1-249-439-11	CARBON 68K 5%	1/4W
R427	1-249-417-11	CARBON 1K 5%	1/4W F
R430	1-249-437-11	CARBON 47K 5%	1/4W
R431	1-247-843-11	CARBON 3.3K 5%	1/4W
R432	1-247-883-00	CARBON 150K 5%	1/4W
R433	1-249-427-11	CARBON 6.8K 5%	1/4W F
R434	1-249-413-11	CARBON 470 5%	1/4W F
R438	1-249-441-11	CARBON 100K 5%	1/4W
R441	1-249-441-11	CARBON 100K 5%	1/4W
R444	1-247-903-00	CARBON 1M 5%	1/4W
R464	1-247-903-00	CARBON 1M 5%	1/4W
R469	1-247-903-00	CARBON 1M 5%	1/4W
R470	1-249-415-11	CARBON 680 5%	1/4W F
R471	1-249-430-11	CARBON 12K 5%	1/4W
R472	1-249-422-11	CARBON 2.7K 5%	1/4W F
R473	1-247-903-00	CARBON 1M 5%	1/4W
R474	1-247-903-00	CARBON 1M 5%	1/4W
R475	1-249-429-11	CARBON 10K 5%	1/4W
R476	1-249-439-11	CARBON 68K 5%	1/4W
R477	1-249-417-11	CARBON 1K 5%	1/4W F
R480	1-249-437-11	CARBON 47K 5%	1/4W
R481	1-247-843-11	CARBON 3.3K 5%	1/4W
R482	1-247-883-00	CARBON 150K 5%	1/4W
R483	1-249-427-11	CARBON 6.8K 5%	1/4W F
R484	1-249-413-11	CARBON 470 5%	1/4W F
R491	1-249-441-11	CARBON 100K 5%	1/4W
R492	1-247-903-00	CARBON 1M 5%	1/4W
R494	1-247-903-00	CARBON 1M 5%	1/4W
		< VARIABLE RESISTOR >	
RV404	1-225-229-11	RES, VAR, CARBON 100KX4 (MASTER VOLUME)	
RV421	1-223-362-11	RES, VAR, CARBON 100K/100K (BASS)	
RV422	1-223-363-11	RES, VAR, CARBON 125K/125K (TREBLE)	
RV423	1-225-447-11	RES, VAR, CARBON 100K/100K (BALANCE)	

VOLUME **VR-TONE**

Ref. No.	Part No.	Description	Remarks
		< SWITCH >	
S240	1-554-937-11	SWITCH, KEY BOARD (BASS BOOST)	

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Ref. No.	Part No.	Description	Remarks
		MISCELLANEOUS	
		**************	
11	1-769-908-11	WIRE (FLAT TYPE) (9 CORE)	
12	1-765-314-11	WIRE (FLAT TYPE) (7 CORE)	
61	1-773-252-11	WIRE (FLAT TYPE) (27 CORE)	
⚠71	1-751-520-11	CORD, POWER (UK)	
⚠71	1-769-744-11	CORD, POWER (AEP,G,EE)	
⚠CNJ903	1-526-794-11	OUTLET, AC (AEP,G,EE)	
⚠T901	1-431-260-11	TRANSFORMER, POWER (DE315)	
⚠T901	1-431-266-11	TRANSFORMER, POWER (DE415)	

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Ref. No.	Part No.	Description	Remarks
		ACCESSORIES & PACKING MATERIALS	
		********************************	
	1-475-042-11	ADAPTOR (21PIN D. SUB)	
	1-475-136-21	REMOTE COMMANDER (RM-U301) (DE315)	
	1-475-137-11	REMOTE COMMANDER (RM-P301) (DE415)	
	1-501-374-11	ANTENNA, LOOP	
	1-501-594-11	ANTENNA (FM)	
	3-859-657-11	MANUAL, INSTRUCTION (ENGLISH/FRENCH/GERMAN/DUTCH/ITALIAN)(AEP,UK,G)	
	3-859-657-41	MANUAL, INSTRUCTION (SPANISH/SWEDISH/FRENCH/DANISH/PORTUGUESE)(AEP)	
	3-859-657-51	MANUAL, INSTRUCTION (ENGLISH/RUSSIAN/POLISH)(EE)	
	4-981-643-01	COVER, BATTERY (for RM-P301/U301)	

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Ref. No.	Part No.	Description	Remarks
		**************	
		HARDWARE LIST	
		**************	
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#2	7-685-881-09	SCREW +BVTT 4X8 (S)	
#3	7-685-872-09	SCREW +BVTT 3X8 (S)	
#4	7-658-646-71	SCREW +BTP 3X8	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.